

What is claimed is:

1. A device for detecting humans comprising:
 - a radio frequency transmitter for generating a signal;
 - 5 a radio frequency receiver spaced relative to the radio frequency transmitter for receiving a portion of the signal;
 - a path there between sufficient for humans to pass between the transmitter and receiver; and
 - 10 a receiver that includes a detector responsive to a change in the received portion of the signal for determining the passing by of a human.
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2. A device as claimed in Claim 1 wherein the radio frequency transmitter and receiver are each housed in a pedestal.
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3. A device as claimed in Claim 2 wherein the path comprises a lane defined by spacing between the pedestals.
4. A device as claimed in any of Claims 1, 2 or 3 wherein the radio frequency transmitter includes a first antenna for generating a vertically polarized radio frequency signal.
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5. A device as claimed in any of Claims 1 to 4 wherein the first antenna comprises a dipole antenna.

6. A device as claimed in any of Claims 1 to 4 wherein the first antenna comprises a folded dipole antenna.
7. A device as claimed in any of Claims 1 to 6 further comprising a second antenna for generating a horizontally polarized signal.
8. A device as claimed in any of Claim 6 or 7 wherein the second antenna comprises a dipole antenna.
- 10 9. A device as claimed in any of Claim 6 or 7 wherein the second antenna comprises a folded dipole antenna.
10. A device as claimed in any of Claims 1, 2, or 3 wherein the radio frequency transmitter includes a first and a third antenna.
- 15 11. A device as claimed in Claim 10 wherein the first and third antennas comprise a dipole antenna.
12. A device as claimed in Claim 10 wherein the first and third antennas comprise a folded dipole antenna.
- 20 13. A device as claimed in any of Claims 11 or 12 further comprising a second antenna for generating a horizontally polarized signal.

14. A device as claimed in any of Claims 10 to 13 wherein first and third antennas are coupled to a single transmitter.

5 15. A device as claimed in any of Claims 10 to 13 wherein first and third antennas are coupled to separate transmitters.

16. Any of Claims 4 to 15 wherein a metallic reflector is positioned behind each antenna relative to the path.

10 17. A device as claimed in claims 1 to 16 wherein the detector responds to a change in the amplitude of the received signal.

18. A device as claimed in claims 1 to 16 wherein both the phase and amplitude of the received signal are used in making a determination.

15 19. A building-access security system comprising a plurality of devices of any of claims 1 to 18.

20. A people-counting system comprising a plurality of devices of any of claims 1 to 18.

21. A building-access security system comprising a video camera system and a plurality of the devices of any of claims 1 to 18.

22. A building-access security system comprising a plurality of devices of any of claims 1 to 18, each further comprising an IR detection beam system.

5 23. A building-access security system comprising a plurality of the devices of any of claims 1 to 18, each device further comprising distance sensors.

24. A building-access security system as claimed in claims 22 or 23 further comprising a video camera system.

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25. A building-access security system as claimed in claim 21 or 24 wherein the video camera system includes stereo video.

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26. A device as claimed in claims 1 to 16 wherein the device includes a capacitance sensor.

27. A device as claimed in claims 1 to 16 wherein the transmitter and receiver are operable to provide a spread spectrum signal.

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